Raising science attitudes and perceptions at Key Stage 3

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Context-based learning[1]

Real-world applications of the science curriculum.

Non-science applications of science.

Delivery by experts from different areas of science indirectly communicates diverse careers.

Practical focus[2,3]

Hands-on and visual conceptualisation of complex concepts.

Wet chemistry workshops improve practical skills and confidence.

Team work, problem solving and presentation skills nurtured early on.

Repeat engagement

Enables project-based learning[4].

Builds familiarity with facilitator for more rounded engagement.

Local emphasis

Bilingual delivery.

Empowerment and relatability.

Background

Low science uptake post-GCSE

Project aims

To increase uptake through enhancing attitudes and perceptions towards science

"I don't really know what a science job is"

"It's, like, out of fashion"

Strategy

Deliver practical and applied chemistry workshops over a 3 year period

Data collection

Longitudinal study design using questionnaires and focus group interviews

Next Steps...

Explore and further validate questionnaire data using Exploratory Factor Analysis and Confirmatory Factor Analysis[5]:

Parallel analysis of PCA determines the number of factors present.

Factor loadings explain interrelationships between latent and observed variables.

CFA applied to test set (30% of data) allows confirmation of the model.

Factor score coefficients allow item weighting when generating overall latent variable 'scores'[6].

Build an understanding of the relationships between science capital, attitudes, perceptions and demographics.

References

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